DOCUMENT RESUME

ED 132 506 CS 003 061

AUTHOR Harper, C. B. J.
TITLE The Importance of Attending Behaviour in Learning to Read.
PUB DATE 76
NOTE 19p.; Paper presented at the Annual Meeting of the International Reading Association (21st, Anaheim, California, May 10-14, 1976) ; Best copy available

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Attention; *Attention Control; *Attention Span; *Beginning Reading; Effective Teaching; Literature Reviews; Primary Education; *Reading Ability; Reading Instruction; Reading Materials; *Reading Research; Sex Differences; Visual Perception

ABSTRACT

A survey of research indicates that a high correlation exists between the attending behavior of beginning readers and their ability to learn to read. Level of attention can be associated with ability to ignore unrelated stimuli, interest in the reading material, perceptual problems, and the sex of the reader. It is suggested that sex differences in attending behavior may be a result of the content of reading materials in the primary grades; that is, girls' higher performance is due to their greater interest in what is usually female-oriented subject matter. Teachers should therefore take care to provide material which interests both sexes and should encourage reading tasks which necessitate active attention. They should utilize a multisensory approach when appropriate, teach attending skills prior to formal reading instruction, and become aware of possible distracting influences and perceptual problems. (KS)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED132506

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

THE IMPORTANCE OF ATTENDING BEHAVIOUR IN LEARNING TO READ

A paper to be presented at the 21st Annual Convention, International Reading Association, Anaheim, California May 10-14 1976.

C.B.J. Harper, Senior Lecturer in Education, Massey University, New Zealand.

"One category of behaviour that enters into almost all informal and formal education of the child involves what is called 'attention' in common sense terms" (37) or as Strang McCullough and Traxler more succinctly put it, "Alert attention is prerequisite to learning" (38). Harris (16) is more explanatory. "The ability to attend and concentrate is basic to efficiency in perception, learning and memory. Ability to attend and concentrate means that the person can maintain focus on particular stimuli and disregard or suppress other stimulation that reaches him at the same time, thus maintaining a stable figure in the focus of attention, against a non-interfering background".

It needs no further elaboration to emphasize the importance of appropriate attending behaviour for the successful attainment of reading skills. Obviously attending to the task in general is essential but attending to specific important cues within the task is equally importart. Evidence is accruing to indicate that poorer readers do not attend for the same percentage of time during reading instruction as do better readers. For example, in my own research (15) in relatively tightly structured reading situations, three slow readers (6yr olds) typically spent between 30 and 40 per cent of their time non attending and two slow readers displayed between 40 and 50 per cent of their time non attenting. Begg (3) in daily reading sessions observed one boy (9 yr old) who attended for less than 40% of his time. This would mean that many poorer readers could be virually wasting between forty and one hundred and twenty hours of reading time per year. It would be understandable if this lack of attending is one effect

CS 003 061

BEST COPY AVAILABLE

of reading failure but there is sufficient evidence to suggest that poor readers are also poor attenders from the very beginnings of schooling.

For example, Samuels & Turnure (3) found that even in first grade there was a correlation of .44 between attention and word recognition and in my own research a positive relationship was found between reading and attending after children had spent one year at school. This relationship appears to be remarkably stable through age and experience as Cobb (10) reports a correlation of .45 for fourth grade pupils between attention and reading achievement and Lahaderne (2) similarly .51 to .39 for sixth graders. Willows (42) goes further than quantitative differences and reports that "good and poor readers probably focus their attention on different aspects of the reading task. Poor readers" she states, " appear to focus most of their processing capacity on the visual aspects of the display. Good readers, on the other hand, have automatized the more basic visual skills involved in reading to the extent that they can be handled 'preattentively'. Thus, they are able to concentrate most of their processing capacity on the extraction of meanings, a process that normally serves them well .....".

Evidence can also be produced to demonstrate that the reading underachiever is less able to withstand the disrupting effect of distracting stimuli. "Many different types of information may sometimes be available as potential sources of distraction during reading. Extraneous auditory, olfactory, visual and tactual-kinesthetic stimuli as well as internal cognitive activities all occasionally provide task-irrelevant information while an individual is reading. There is, however, one potentially distracting source of information which is intrinsic to every normal reading situation - words which are available in peripheral vision but which

are not immediately necessary to an understanding of the text". In oral reading at least Willows (42) found that poor readers were unable to ignore the adjacent irrelevant lines of print which had been deliberately inserted. Samuels (28) work would suggest that poor readers also are unable to remain undistracted by adjacent pictures on a page. He states that "no significant difference was found in reading acquisition between the picture and no picture condition among the better readers. Among the poorer readers, subjects in the no picture condition learned to read significantly more words than did subjects in the picture condition". This does not necessarily imply that early readers should be pictureless as pictures are known to have a motivating effect on young learners. It does suggest, as Samuels (28) himself agrees, that we need to know more about the role of pictures in terms of motivational and attentional processes.

The importance of the attending variable and also the complexity involved in studying it in relation to reading attainment, are further emphasized when one considers the attentional differences observed between boys and girls. While little work has been forthcoming studying sex related attentional differences in reading situations, what has appeared has indicated that definite differences do occur. Samuels & Turnure (30) report that girls are markedly superior to boys in attentiveness to reading tasks, a finding supported by my own research (15). Major sex-related differences can undoubtedly be attributed to the sex role socialization processes inherent in society but there may be an even more basic element present perhaps from birth. Silverman (33) for example reports that male babies tend to respond more readily to "gestalts which are easily segmentalized" while females "respond more to whole forms which are more complex and novel and which are less amenable to

critical analysis". It is interesting to note that the child's first introduction to formal reading instruction would tend to present the latter situation rather than the former. Evidence for socially induced sex role differences comes from Goodenough (14) who reports that nursery school boys develop a consistent sex type earlier than do girls and that girls develop earlier interest in persons than do boys. Although this data was derived from parental reports it does corroborate the findings of Ross & Ross (27) who suggest that preschool boys more strongly resist sex-inappropriate behaviour than do preschool girls and is also in accord with Witryol's (43) conclusions that boys tend to prefer material reinforcements and girls prefer social reinforcement.

When we further consider that Clark(8) in Scotland, reporting on boys and girls who could read on school entry, found that the girls' motivation was a desire to read stories while the boys' driving force was a desire for information, it is not surprising that Farley (12) is most adamant that work on correlates of attention "must deal with males and females separately".

The total print page itself can cause perceptual and attentional problems to some children. This fortunately appears to be characteristic of only a few. Most of us assume that black print on a white background, because it gives the greatest contrast, is the easiest to read. For some children this is not so. Meares (24) quotes statements from such children. "There's all the little white streams running down the page and there's all blurry black (lines of print) in between them. Sometimes I have to shake

my head three or four times before a word will come". And, from another, "The white glares at you and you can't see the black clearly". And, "The white keeps coming through at me". For these unfortunate children it appears that "a light grey figure on a dark grey ground" (24) or slates and slate pencils or a "dirty" perpex sheet to mask the black and white glare, seems to solve their greatest problem with reading. For clinic teachers interested in this field, Meares' (24) work makes fascinating reading.

For the majority of children however, there is evidence that simple reinforcing incentives can increase appropriate attending considerably. Begg (3) for example demonstrates one hundred per cent improvement by applying "free time" incentives, while Broden et al (6) indicate that increased teacher attention to a pupil will not only increase the pupils own attending time but also produce spin off attending improvements in adjacent pupils.

These results are not surprising since it has long been accepted that, in spite of Silverman's previously mentioned basic sex differences in attending, a child's attentional repertoire is almost wholly learned from his experiences in his early years (37). Thus if a child has not had early experience of books he has no attending behaviours conducive to receiving instruction from and about books - he does not know where to attend on a page to begin the print or even what print is. If he has heard no stories prior to school entry he has no reason to attend at story time. Boys have learned to attend to a quite different set of stimuli than have girls and it may be that the two sexes have surprisingly few strong stimuli in common.

Even if both boys and girls have had experience of books and reading, boys have had no reason to attend to reading material which they quickly assess to be female orientated. Therefore, rather than the reading task itself being seen as a more of a female activity as some writers have suggested (11,18) it seems more likely that the content of early readers has differential effects on the learned attentional repertoires of young children.

In U.S.A. it is well documented that girls tend to excel boys in early reading attainment (11,18,39). It has also been reported that the content of American early readers provides less challenge and affinity for boys. For example Heilman (17) states, "the rigid and conformist mood, tone and atmosphere contained in and conveyed by the preprimers, primers and early readers are considerably less challenging to boys than to girls". Blom et al (4,5), while producing evidence that primer stories are of about equal interest to both boys and girls hypothesized that "the activities most frequently depicted by the stories would be those most commonly engaged in by girls and that the masculine activities depicted would result in failure more frequently than would the feminine activities". The authors stated also that there was a "regressive pull" to the stories in that they portray a lower level of development than that of the children for whom they are intended. Dwyer (11), putting the feminist point of view, queries Blom's conclusions and states that there may be "sometimes confusion as to the exactlocation of the boundaries between femininity and childlikeness". It may be that Dwyer has a valid point and it is certainly true that publishers have become more cognizant of boy-girl bias in books of recent years.

Be this as it may the argument assumes strength when it is considered that in Britain almost the reverse situation exists. Of eleven relevant research studies, four (19,26,32,35) found that girls excelled boys in reading attainment, two (18,26) showed boys to be superior and five (7,22,25,36,41) noted no significant difference. Again contrary to the U.S.A. situation it appears that earlier readers are more definitely boy orientated. Lobban (21) for example coded the stories in six popular British reading schemes according to three categories; boy sex role, girl sex role and both sexes. Of the 225 stories coded, 13 roles, topics or activities were coded for girls only, 36 were for boys only and 14 were for both sexes. (Presumably there was considerable repetition). Of these 225 stories, 179 had people as the central characters; 35 of these were female and 71 were male. In only one case was there a woman driver depicted, in no cases is 'father' seen to do anything resembling household chores and in no case did 'mother' go out to work. Besides presenting a male bias, the British readers, even more than American, appeared to present a life style totally out of date.

It is very likely then that the attention of boys and girls is subject to differential attraction from early reading materials and also that in many published books the learned attention of both boys and girls is not attracted to fictional situations which do not parallel real life either in terms of historical and social change or ethnic aspects.

Learning to read is a function of the child's attentional repertoire and according to Lahaderne (20) the child's attending

ability is unrelated to attitudinal factors. It may also be that appropriate attending is even more important in initial reading than is intelligence. For example Lahaderne (20) found positive correlations between intelligence and both attention and reading attainment but after the influence of intelligence had been partialled out a significant relationship between reading and attention still remained. Zeaman & House (4) put forward evidence that for certain tasks the reading retardate does not know where to focus his attention during initial learning trials, but that once the correct focus has been discovered the retardate's learning curve approaches that of a normal learner. This again provides evidence of the centrality of attention as a factor in learning.

Attention is not a simple factor in any learning situation but in the learning of reading both visual and auditory attending and often kinesthetic and even tactile attending are involved. Many young children have had little or no experience of the intermodal transfer and combination of attention modalities necessary for success.

Evidence of the deficits appearing in experiential attentional areas among young children is provided by both Clay (9) and Barney (2).

Clay (9) for example points out that on entry to school (5 year olds in New Zealand) between 47% and 56% of children have no firm understanding of the left to right directionality of reading. After one year at school 4% to 16% (depending upon the ethnic composition of the group) still are not consistent in their directionality. One third of new entrants confused

print and pictures as the source of the story; while after six months schooling 10% still displayed confusion in this area. Again, on entry 48% could match word-space-word and after twelve months 16% were still incapable of this type of discrimination. At five years of age, 28% could locate "the first letter", at six years 41% were successful and at seven years there were still 19% who could not succeed at this essential task.

Clay (9) herself states, "Research findings suggest that when a child first begins to read English texts there is a strong left to right horizontal, directional component to his behaviour, with his attention being focussed on the left ends of lines and of words. The child's attempts to read cannot be matched correctly to the printed text unless he is attending to the correct position when he says a word and is proceeding in the correct direction as he completes the sentence. Any learning about letter-sound relationships must depend on his attending to the correct part of the text".

Barney (2) observes younger children along similar dimensions. In a group of 117 children in preschool classes (4 year olds) he finds that when asked what was in a book 50% said 'pictures', 10% said 'words or writing' and 4% said, 'a story'. When confronted with a page of both print and pictures and asked, 'what part of the page do we read?", 63% indicated the print, 34% roamed vaguely over the page and 3% pointed to the pictures only. Five percent were able to point accurately, matching word for word, as a story was being read to them and 49% could indicate the top line, left hand end when asked where to begin reading. Barney's

group of children incidentally, was slightly biased toward the upper end of the socioeconomic scale. What is apparent from this sphere of study is that there is considerable disparity in the preschool experience, knowledge and consequently the attentional repertoires of our beginning readers. Also obvious is that teacher knowledge of the dimensions of child attention is crucial for effective classroom instruction. Fundamental to effectiveness in teaching reading is the knowledge and skills repertoire of the teacher. The teacher as a active unit in the total classroom interaction is more important than the organization, the method or the materials employed. Just as the child must attend to the reading task, so also must the teacher attend to both the working child engaged in the task and the relevant dimensions of the task.

Having then established the importance of teacher knowledge it is perhaps appropriate to summarize more specifically some of the important dimensions of attending.

If, when a child meets his reading books, he sees or learns of nothing which excites his interest or curiosity then his drive to attend is likely to be reduced. Evidence has been quoted earlier (8,17,21) to suggest that much of our early reading material either presents a rather unrealistic picture of contemporary life styles or is biased towards one sex or the other. Certainly very little is likely to satisfy the young male drive for information mentioned by Clark (7).

A content analysis of sex-related interest in reading materials could well be categorised as follows:-

A. Fiction
1. Boy interest
2. Girl interest

3. Both sex interest

B. Fact

1. Boy interest
2. Girl interest
3. both sex interest

My thesis would be that early reading material should attain suitable equilibrium among these six categories. Teachers, being aware of this, would need to select or in some cases develop their own material in order to maintain for each individual pupil in their classes an appropriate balance.

2. "On entry to school the slowest children will still learn best by having their hands guided passively through a manual analysis of the forms and letter. The average child at this stage will benefit from information about print coming to him from both hand and eye. He may be able to discriminate better the shapes which he can handle or make movements with, rather than the ones he can merely look at. When he tries to write, this directs his attention to letters in a particular order and forces him to work sequentially at the survey of print". (9)

This multisensory approach to reading may be known as VAKT or to some older teacher it may revive memories of Fernald tactics. When a child receives information through several sensory modalities it seems that some consolidation of learning occurs. When kinesthetic-tactile modalities are used it means that the child is forced by his actions to attend to the task in hand. This is one of the reasons why 'activity methods' or 'active learning' or 'learning by doing' are not only catch phrases but effective teaching tactics. If follows then that as part of her classroom

engineering a teacher must endeavour to ensure that a child is given tasks which necessitate his active attention. Tasks also must be appropriate in terms of difficulty level, time allowance, interest level and in particular they must also be conducive to the next planned stage of learning. In my experience and observation it seems that there are gross differences in the abilities of teachers to engineer the classroom environment.

3. One of the principles emphasised within cognitive learning theory is that the perceptual features of a task which are critical to its successful completion, should be clearly presented to the learner. For this to be so a teacher must have a knowledge of what are the critical cues in the reading task. Marchbanks and Levin (23) investigating the cues by which children typically recognize isolated words, found that specific letters, and not the overall shape of the words, form the basis for recognition. The first letter is the most important cue; the final letter the second most important cue. In three letter words the final letter is a more salient cue than in five letter words. While this observed pattern was almost universal there were some kindergarten boys who reversed their preference; that is the last letter was most important and the first letter of second importance. The investigators suggested that this may be because impaired readers were scanning the line of print in the reverse direction. In view of Clay's (9) work on directionality this suggestion assumes more validity and further emphasizes the importance of teacher knowledge of children's attending patterns.

4. Samuels & Turnure (30) state, "It should be pointed out to teachers that reading achievement has been found to be related to attention. Instructional success clearly requires that teachers secure and maintain

the attention of all their pupils". Goldiamond and Dyrud (13) follow this by adding, "The performance of the student may be to a considerable extent a function of the procedures used to establish that behaviour; we should look to deficits in our own procedures before ascribing deficits to the students or difficulty to the problem". What this means is that we may have to teach some children appropriate attending skills prior to formal instruction or prior to moving to a new section of work. Once initial attention to the task is established it is further important to be aware of just what are the important cues within the task and if in fact the child's attention is directed toward them.

5. It is quite evident that many children, particularly poor readers, are unable to resist the distractions which compete for their attention. Obviously a child can be distracted by physical features and activities of the classroom and also by incidental noises impinging on his senses. More subtle however, are the distracting influences within the reading task itself. Pictures in a book function as distracting stimuli, especially for poor readers (28,29,40) and it may be essential on occasion for the teacher to be able to recognize this problem and perhaps to cover or remove a picture.

As mentioned earlier (42) slow readers are apt to focus attention on the word by word "visual aspects of the display", whereas good readers tend more to scan the text picking up quickly the important word cues which validate their linguistic expectancies. Willows (42) suggests that, "perhaps if children were trained to try to 'guess what comes next' rather than to spend most of their efforts 'analyzing what is there', they would become more proficient readers.

Again there are some children for whom, as Meares (24) has observed, the intense whiteness of the printed page causes perceptual interference. Thus if a child is seen to be squinting or blinking excessively it may be that his problem can be solved by covering the offending whiteness with a 'well used' plastic sheet.

As always however, it requires knowledge and skilled attention on the part of the teacher to become aware of the salient factors in the child-book interaction and to apply appropriate remedies sufficiently early. There is just no substitute for the knowledge and skills repertoire of the trained teacher.

B I B L I O G R A P H Y

1. Baker R.W. & Madell T.O. (1965) "A Continued Investigation of Susceptibility to Distraction in Academically Underachieving and Achieving Male College Students" Journal of Educational Psychology 1965 56, 254 - 258

2. Barney W.D. (1974) "Kindergarten Four-Year-Olds' Concept of Reading, Knowledge of Books and of Print". paper delivered at New Zealand I.R.A. Conference, Christchurch New Zealand.

3. Begg K.M. (1975) "Effects of a Free Time Incentive on the Level of Attention of a Standard two Pupil" in Educational Research Newsletter Dept. of Education, University of Canterbury New Zealand P 5-6.

4. Blom G.E. Waite R.R. & Zimet S. (1966) "A Motivational Content Analysis of Primers" Project Literacy Reports No. 7 Cornell University.

5. Blom G.E. Waite R.R. & Zimet S. (1970) "A Motivational Content Analysis of Childrens Primers", in LevinH. & Williams J.P. (Eds) Basic Studies on Reading. Basic Books Inc.

6. Broden M., Bruce C., Mitchell M.A., Carter V. & Hall R.V. (1970) "Effects of Teacher Attention on Attending Behaviour of two boys at Adjacent Desks" Journal of Applied Behaviour Analysis No. 3 Fall 1970 199-203.

7. Clark M.M. (1970) Reading Difficulties in Schools Penguin Harmondsworth.

8. Clark M.M. (1974) "Reading Considered in a Language Context" paper given at New Zealand I.R.A. Conference, Christchurch, New Zealand.

9. Clay M.M. (1972) Reading: The Patterning of Complex Behaviour Heinemann New Zealand.

10. Cobb J.A. (1972) "Relationship of Discrete Classroom Behaviours to Fourth Grade Academic Achievemant" Journal of Ed. Psych. 1972, 63, 74-80.

11. Dwyer C.A. (1973) "Sex Differences in Reading. An Evaluation and Critique of Current Theories" Review of Educational Research Vol 43 No. 4 Fall 1973 455-467.

12. Farley F.H. & Manske M.E. (1969) "The relationship of Individual Differences in the Orienting Response to Complex Learning Kindergarteners" Madison: Wisconsin Research and Development Centre for Cognitive Learning.

13. Goldiamond I. & Dyrud J.E. (1966) "Reading as Operant Behaviour" in Money J. The Disabled Reader: Education of the Dyslexic Child John Hopkins Press.

14. Goodenough E.W. (1957) "Interest in Persons as as Aspect of Sex Differences in the Early Years" Genet. Psychol. Monogr. 1957,55 287-323

15. Harper C.B.J. & Graham E.N. (1974) "Attending Behaviour and Reading" in New Zealand Journal of Educational Studies Vol. 9 No. 2 November 1974 122-126.

16. Harris A.J. (1970) How to Increase Reading Ability 5th Ed. McKay.

17. Heilman A.W. (1967) Principles and Practices of Teaching Reading (2nd Ed.) Charles Merrill.

18. Johnson D.D. (1975) "Cross Cultural Perspectives on Sex Differences in Reading - A Preliminary Investigation" a paper presented to the American Educational Research Association 1975 Annual Meeting Washington D.C. April 1st 1975.

19. Kelmer Pringle M.L. Butler N.R. & Davie R. (1966) 11,000 Seven Year Olds First Report of the National Child Development Study. Longmans. London.

20. Lahaderne H.M. (1968) "Attitudinal and Intellectual Correlates of Attention: A Study of Four Six Grade Classrooms Journal of Ed. Psych. 1968, 59 320-324.

21. Lobban G.M. "Presentation of Sex Roles in British Reading Schemes" Forum for the Discussion of New Trends in Education 16, 2.

22. McLaren V.M. (1950) "Socio-economic Status and Reading Ability - A Study in Infant Reading" in Scottish Council for Research in Education Studies in Reading Vol. 2 University of London Press.

23. Marchbanks G. & Levin H. (1965) "Cues by which Children Recognize Words" Journal of Ed. Psych. 1965 Vol. 56 No. 2 57-61.

24. Meares O. (1972) "Some Children Talk About Print" (unpublished article) North Shore Reading Clinic, Belmont Primary School, Auckland New Zealand.

25. Morris J.M. (1966) Standards and Progress in Reading N.F.E.R. Slough.

26. Nisbet J. Welsh J. & Watt J. (1974) Reading Standards in Aberdeen Education Research Vol. 16 No. 3 June 1974 172-180.

27. Ross D.M. & Ross S.A. (1972) "Resistance by Preschool Boys to Sex inappropriate Behaviour" Journal of Educational Psychology 1972 Vol. 63, No. 4 3 2-3 6.

28. Samuels S.J. (1967) "Attentional Process in Reading: The Effect of Pictures on the Acquisition of Reading Responses" Journal of Ed. Psych Vol. 58 No. 6, 337-342.

29. Samuels S.J. & Jeffrey W.E. (1966) "Discriminability of Words and Letter Cues Used in Learning to Read" Journal of Ed. Psychology 1966, 57, 337-340.

30. Samuels S.J. & Turnure J.E. (1974) "Attention and Reading Achievement in First-Grade Boys and Girls" in Journal of Ed. Psych. Vol. 66 No. 1 29-32.

31. Santostefano S., Rutledge L. & Randell D. (1965) "Cognitive Styles and Reading Disability" Psychology in Schools 1965, 2, 57-62.

33. Silverman J. (1970) "Attentional Styles and the Study of Sex Differences" in Mostofsky D.I. Attention: Contempory Theory and Analysis. Appleton Century Crafts.

32. Shearer E. & Apps R. (1975) " A Restandardization of the Burt-Vernon and Schonell Graded Word Reading Tests" Educational Research Vol. 18 No. 1 November 1975 67-73

34. Silverman M., Davids A. & Andrews J.M. (1963) "Powers of Attention and Academic Achievement" Perceptual and Motor Skills 1963 17, 243-249.

35. Southgate V. (1959) Southgate Group Reading Tests London University of London Press.

36. Southgate V. (1962) Southgate Group Reading Tests - Sentence Completion Test University of London Press

37. Staats A.W. (1968) Learning, Language and Cognition Holt, Rinehart & Winston.

38. Strong R., McCullough C.M. & Traxler A.E. (1967) The Improvement of Reading 4th Ed. McGraw-Hill.

39. Thompson G.B. (1975) "Sex Differences in Reading Attainment" Educational Research Vol. 18 No. 1 November 1975.

40. Underwood B.J. (1963) "Stimulus Selection in Verbal Learning" in Cofer C.N. & Musgrave B.S. (Eds) Verbal Behaviour and Learning: Problems & Process s.

41. Vernon P.E. (1938) The Standardization of a Word Reading Test University of London Press.

42. Willows D.M. (1974) "Reading Between the Lines: Selective Attention in Good and Poor Readers" Child Development 1974, 45, 408-415.

43. Witryol S.L., Tyrell D.J. & Lowden L.M. (1964) "Five-Choice Discrimination Learning by Children Under Simultaneous Incentive Conditions" Child Development 1964, 35, 233-243.

44. Zeaman D. & House B.J. (1967) " The Relation of I.Q. and Learning in Gagné R.M. (Ed.) Learning and Individual Differences Charles E. Merrill.